AMENDMENTS TO THE SPECIFICATION

Please add the following new paragraph after the paragraph on page 5, lines 22-25, starting with, "It is another objective of the present invention":

It is an object of the present invention to provide methods for creating apomictic plants from sexual plants without using mutagenic procedures or plants that are already apomictic. The present invention provides methods for producing apomictic plants from two or more sexual plants of the same or related species. One step of the method involves obtaining two sexual lines whose female reproductive phenotypes differ such that under the same environmental conditions (day length, light intensities, temperature regimes, etc.) an appropriate degree of asynchrony in female developmental schedules between the two lines occurs. Appropriate degrees of asynchrony include but are not limited to situations in which megasporogenesis in one line is initiated at about the same time embryo sac formation is initiated in the other line relative to the development of nongametophytic ovule and ovary tissues (nucellus, integuments, pericarp, etc) and other phenological factors such as photoperiod-regulated floral induction times. The accelerated line (line undergoing embryo sac development) would have already accomplished floral induction and megasporogenesis.

Please add the following new paragraphs after the paragraph on page 32, lines 10-11, starting with "(a) appropriate flowing responses and":

EXAMPLE 7

Making Apomictic Plants from Sexual Lines Divergent in Floral Development

The techniques in Examples 1 through 6 are used as guidelines to obtain three or more lines of the same species (or closely related group of species) distinctly adapted to long days (14 to 20 h) and generally an early archespore development/early meiosis/early gametophyte development relative to the development of nongametophytic ovule and ovary tissues (nucellus, integuments, pericarp, etc). The same techniques are used as guidelines to obtain three or more lines of the same species (or group of species) distinctly adapted to short days (10 to 12 h) and generally a late archespore development/late meiosis/late gametophyte development relative to the development of nongametophytic ovule and ovary tissues. The several lines of each category (long-day plants and

short-day plants, etc) are selected such that they form a continuum with regard to the day length in which flowering responses are induced, e.g. somewhat long, long, and very long and somewhat short, short, and very short. The lines are selected such that the initiation of embryo sac formation (degenerating megaspore stage) in one set of lines (usually the long-day-adapted lines) occurs at about the same time as female meiotic prophase through metaphase is occurring in the other set of lines relative to the development of the nongametophytic tissues of the ovule and ovary.

Amphiploids are then produced using the standard procedures described above (colchicine induction or through repeated s production of B.sub.III hybrids) or other appropriate procedures. Standard hybridization procedures are used for producing hybrids among Tripsacum species. For Antennaria, pistillate plants are isolated by placing pollination bags (made from laboratory tissues, e.g. KIMWIPES) over the entire capitulescence. Pollination is accomplished by rubbing receptive pistillate inflorescences together with staminate heads at anthesis. Unpollinated control capitulescences are used to verify absence of apomixis of each parent clone. This is especially important with tetraploid clones in which either amphimictic or apomictic reproduction occurs. The pollination bags hold the fruits as they mature, and no embryo rescue is required.

At least three of the nine possible combinations of parents (one from each adaptation group) are made into amphiploids initially: the somewhat early line with the somewhat late line, the early line with the late line, and the very early line with the very late line. These are checked for the expression of apomixis as described above. Additional amphiploids from the nine possibilities are made if apomixis is not expressed. It will be appreciated that the genetic background in which the lines are derived may influence the expression of apomixis. Thus, the selection or production of additional lines incorporating different genetic backgrounds may occasionally be necessary.